

SEQUENCE LISTING

<110> Roberts, James A
Kelly, Beth L.

<120> METHODS FOR INCREASING PLANT CELL PROLIFERATION BY
FUNCTIONALLY INHIBITING A PLANT CYCLIN INHIBITOR GENE

<130> 14538A-45-1

<140>

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<150> 60/134,373

<151> 1999-05-14

<160> 22

<170> PatentIn Ver. 2.1

<210> 1

<211> 408

<212> DNA

<213> Arabidopsis thaliana

<400> 1

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ttcaagaaac aagttcctca acacaacaac atcaacacaa gtataactct cgatcaaaca 120
tctacatcta ctattgtctc tacatgttct tcttcatcaa cgactttgtc ttctcctcta 180
gacacaatct actctgttcc ctctccatcc ccagcagcgg tgctgacgtc accaggcggg 240
tggtgtaccc cgaaagccaa gaagtctagg ataccggaga tgctgacgtg tccaccggcg 300
ccgaagaagc aaagggtctc gaaaaactgt gtgttacgac ggagacagat cgttttcttt 360
gctccgccgg agatagagct cttcttcgtc aacgcacacg atcgatga 408
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<210> 2

<211> 135

<212> PRT

<213> Arabidopsis thaliana

<400> 2

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Met Ala Ser Lys Lys Ala Arg Lys Pro Asn Arg Ala Glu Lys Lys Leu
  1             5             10             15

Thr Arg Ser Cys Phe Lys Lys Gln Val Pro Gln His Asn Asn Ile Asn
      20             25             30

Thr Ser Ile Thr Leu Asp Gln Thr Ser Thr Ser Thr Ile Val Ser Thr
```

| | | |
|---|-----|-------|
| 35 | 40 | 45 |
| Cys Ser Ser Ser Ser Thr Thr Leu Ser Ser Pro Leu Asp Thr Ile Tyr | | |
| 50 | 55 | 60 |
| Ser Val Pro Ser Pro Ser Pro Ala Ala Val Leu Thr Ser Pro Gly Gly | | |
| 65 | 70 | 75 80 |
| Cys Cys Thr Pro Lys Ala Lys Lys Ser Arg Ile Pro Glu Met Leu Thr | | |
| 85 | 90 | 95 |
| Cys Pro Pro Ala Pro Lys Lys Gln Arg Val Ser Lys Asn Cys Val Leu | | |
| 100 | 105 | 110 |
| Arg Arg Arg Gln Ile Val Phe Phe Ala Pro Pro Glu Ile Glu Leu Phe | | |
| 115 | 120 | 125 |
| Phe Val Asn Ala His Asp Arg | | |
| 130 | 135 | |

<210> 3

<211> 639

<212> DNA

<213> Arabidopsis thaliana

<400> 3

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ctcgagattt accaaaaaag tttcccaaaa aaacaaaaac atacacaagt ttagatatgg 60
atcttgaatt actacaagat ttgtccaaat tcaatttccc aacacccatc aagatccgat 120
ccaaaacctc aaaaacaaag aaggacgaag gtgatgacga cgaagatgac ctccgctgca 180
gcacaccac atcccaagaa cacaagattc ccgccgtcgt agactctcca cctcctccgc 240
cgagaaaacc ccggccacca ccgtcagcac cgtcggctac ggcggtctctg atgatcagat 300
cgtgcaagag gaagctttta gtgtcgactt gtgagataat catgaatcgg gaagagattg 360
accgtttctt ctctccgtc tacaatgaga cgtcgactac ggctaaacgg cggagaagtt 420
acccttattg ttctcgaaga tgaggcttaa ttcaatattt acattttttt acagttttac 480
tggaatatt gtgaaattaa ttatctgttg gtgttcggtt ttaaataattt ttaatttaac 540
tatgaatatg gatggataat tttctgcaac cgcgcatatt aatttcgcat ggagggggtcg 600
atgttgtaaa ttgagtaata aatgaaggta aatctcgag 639

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<210> 4

<211> 213

<212> PRT

<213> Arabidopsis thaliana

<400> 4

| |
|---|
| Pro Arg Asp Leu Pro Lys Lys Phe Pro Lys Lys Thr Lys Thr Tyr Thr |
| 1 5 10 15 |

Ser Leu Asp Met Asp Leu Glu Leu Leu Gln Asp Leu Ser Lys Phe Asn
 20 25 30
 Phe Pro Thr Pro Ile Lys Ile Arg Ser Lys Thr Ser Lys Thr Lys Lys
 35 40 45
 Asp Glu Gly Asp Asp Asp Glu Asp Asp Leu Arg Cys Ser Thr Pro Thr
 50 55 60
 Ser Gln Glu His Lys Ile Pro Ala Val Val Asp Ser Pro Pro Pro Pro
 65 70 75 80
 Pro Arg Lys Pro Arg Pro Pro Pro Ser Ala Pro Ser Ala Thr Ala Ala
 85 90 95
 Leu Met Ile Arg Ser Cys Lys Arg Lys Leu Leu Val Ser Thr Cys Glu
 100 105 110
 Ile Ile Met Asn Arg Glu Glu Ile Asp Arg Phe Phe Ser Ser Val Tyr
 115 120 125
 Asn Glu Thr Ser Thr Thr Ala Lys Arg Arg Arg Ser Tyr Pro Tyr Cys
 130 135 140
 Ser Arg Arg Xaa Gly Leu Ile Gln Tyr Leu His Phe Phe Thr Val Leu
 145 150 155 160
 Leu Glu Ile Leu Xaa Asn Xaa Leu Ser Val Gly Val Arg Phe Xaa Ile
 165 170 175
 Phe Leu Ile Glx Leu Xaa Ile Trp Met Asp Asn Phe Leu Gln Pro Arg
 180 185 190
 Ile Leu Ile Ser His Gly Gly Val Asp Val Val Asn Xaa Val Ile Asn
 195 200 205
 Glu Gly Lys Ser Arg
 210

<210> 5

<211> 809

<212> DNA

<213> Arabidopsis thaliana

<400> 5

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gaaggaagat ggaggaggaa gtggatttag tggaatctag gataattctg tctccgtgtg 120
tacaggcgac gaatcgcggt ggaattgtgg cgagaaattc agcaggagcg tcggagacga 180
gtgttggttat agtacgacgg cgagattctc ctccggttga agaacagtgt caaatcgaa 240
aagaagattc gtcggtttcg tgttggttcta catcggaaga gaaatcgaaa cggagaatcg 300
aatttgtaga tcttgaggaa aataacggtg acgatcgtga aacagaaacg tcgtggattt 360
acgatgattt gaataagagt gaggaatcga tgaacatgga ttcttcttcg gtggctgttg 420
aagatgtaga gtctcgccgc aggttaagga agagtctcca tgagacggtg aaggaagctg 480
agttagaaga cttttttcag gtggcggaga aagatcttcg gaataagttg ttggaatgtt 540
ctatgaagta taacttcgat ttcgagaaaag atgagccact tggcggagga agatacagat 600
gggttaaatt gaatccatga agaagacgat gatgataatg atgatcattg ttttcaccaa 660
agtacttatt atttctcttc tgtaataatc tttgctttga tttttctttt aacaaaatcc 720
aaatgtagat atctttctct cgaataatca ataacatgta attcaactaa aaaaaaaaaa 780
aaaaaaaaaa aaaaaaggt aatctcgag 809

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<210> 6

<211> 203

<212> PRT

<213> Arabidopsis thaliana

<400> 6

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Pro Arg Asp Val Val Glu Glu Asn Gly Val Thr Thr Thr Thr Val Lys
  1             5             10             15

```

```

Arg Arg Lys Met Glu Glu Glu Val Asp Leu Val Glu Ser Arg Ile Ile
      20             25             30

```

```

Leu Ser Pro Cys Val Gln Ala Thr Asn Arg Gly Gly Ile Val Ala Arg
    35             40             45

```

```

Asn Ser Ala Gly Ala Ser Glu Thr Ser Val Val Ile Val Arg Arg Arg
    50             55             60

```

```

Asp Ser Pro Pro Val Glu Glu Gln Cys Gln Ile Glu Glu Glu Asp Ser
    65             70             75             80

```

```

Ser Val Ser Cys Cys Ser Thr Ser Glu Glu Lys Ser Lys Arg Arg Ile
      85             90             95

```

```

Glu Phe Val Asp Leu Glu Glu Asn Asn Gly Asp Asp Arg Glu Thr Glu
    100             105             110

```

```

Thr Ser Trp Ile Tyr Asp Asp Leu Asn Lys Ser Glu Glu Ser Met Asn
    115             120             125

```

```

Met Asp Ser Ser Ser Val Ala Val Glu Asp Val Glu Ser Arg Arg Arg
    130             135             140

```

5

Leu Arg Lys Ser Leu His Glu Thr Val Lys Glu Ala Glu Leu Glu Asp
 145 150 155 160

Phe Phe Gln Val Ala Glu Lys Asp Leu Arg Asn Lys Leu Leu Glu Cys
 165 170 175

Ser Met Lys Tyr Asn Phe Asp Phe Glu Lys Asp Glu Pro Leu Gly Gly
 180 185 190

Gly Arg Tyr Glu Trp Val Lys Leu Asn Pro Xaa
 195 200

<210> 7

<211> 626

<212> DNA

<213> Arabidopsis thaliana

<400> 7

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 cagaagaagc ttcaagcaca agcttctcac cactgaagaa aacgaagctt aatgattctt 120
 ctgattcatc accggactct catgacgtca tcgtcttcgc ggtttcatct tcttccgttg 180
 cttcgtcggc ggcttttagcg tctgatgaat gttccgttac catcggtgga gaagaaagtg 240
 atcagtcctc gagtatcagc tccggttggt tcaccagtga atcgaaagaa atcgcggaaga 300
 acagttcgtc gtttggtgta gatctggagg atcatcaaat cgaaaccgaa accgaaacct 360
 caacattcat caccagcaat ttcagaaaag agacgagtc agtgagtgag ggtttgggag 420
 aaacgacaac agaaatggaa tcatcatcgg caacgaagag aaaacaaccg ggggtgagga 480
 agactccaac ggcggcggag attgaggatt tgttctcgga gctagagagt ccagacgata 540
 agaagaagca attcatagaa aagtacaact tcgatattgt caatgacgaa ccgcttgaag 600
 gtcgctacaa gtgggatcga ctttaa 626

<210> 8

<211> 209

<212> PRT

<213> Arabidopsis thaliana

<400> 8

Pro Arg Asp Leu Pro Lys Asn Pro Arg Glu Lys Lys Met Ser Glu Arg
 1 5 10 15

Lys Arg Glu Leu Ala Glu Glu Ala Ser Ser Thr Ser Phe Ser Pro Leu
 20 25 30

Lys Lys Thr Lys Leu Asn Asp Ser Ser Asp Ser Ser Pro Asp Ser His
 35 40 45

Asp Val Ile Val Phe Ala Val Ser Ser Ser Ser Val Ala Ser Ser Ala

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 50 | | | | | 55 | | | | | 60 | | | | | |
| Ala | Leu | Ala | Ser | Asp | Glu | Cys | Ser | Val | Thr | Ile | Gly | Gly | Glu | Glu | Ser |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Asp | Gln | Ser | Ser | Ser | Ile | Ser | Ser | Gly | Cys | Phe | Thr | Ser | Glu | Ser | Lys |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Glu | Ile | Ala | Lys | Asn | Ser | Ser | Ser | Phe | Gly | Val | Asp | Leu | Glu | Asp | His |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Gln | Ile | Glu | Thr | Glu | Thr | Glu | Thr | Ser | Thr | Phe | Ile | Thr | Ser | Asn | Phe |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Arg | Lys | Glu | Thr | Ser | Pro | Val | Ser | Glu | Gly | Leu | Gly | Glu | Thr | Thr | Thr |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Met | Glu | Ser | Ser | Ser | Ala | Thr | Lys | Arg | Lys | Gln | Pro | Gly | Val | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Lys | Thr | Pro | Thr | Ala | Ala | Glu | Ile | Glu | Asp | Leu | Phe | Ser | Glu | Leu | Glu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Ser | Pro | Asp | Asp | Lys | Lys | Lys | Gln | Phe | Ile | Glu | Lys | Tyr | Asn | Phe | Asp |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Ile | Val | Asn | Asp | Glu | Pro | Leu | Glu | Gly | Arg | Tyr | Lys | Trp | Asp | Arg | Leu |
| | | 195 | | | | | 200 | | | | | 205 | | | |

Xaa

<210> 9

<211> 6

<212> PRT

<213> Arabidopsis thaliana

<400> 9

Glu Xaa Xaa Xaa Xaa Phe

1

5

<210> 10

<211> 23

<212> PRT

<213> Arabidopsis thaliana

<400> 10

Lys Tyr Asn Phe Asp Xaa Xaa Xaa Xaa Xaa Pro Leu Xaa Xaa Gly Arg
1 5 10 15

Tyr Xaa Trp Xaa Xaa Leu Xaa
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<210> 11

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 11

ggtacccgat ttcgagaagg agaagc 26

<210> 12

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 12

gatatcgaca cgacttttct gggctc 26

<210> 13

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 13

gatatcctac ggagccggag aattg 25

<210> 14

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 14

actagtttgt ttctcagctt ccacaaaa

28

<210> 15

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 15

ggtacccgat ttcgagaagg agaagc

26

<210> 16

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 16

actagtgaca cgacttttct gggctc

26

<210> 17

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 17

ggtacccgac aacagaaatg gaatcatc

28

<210> 18

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 18

gtcgacaaag tcgatccac ttgtagc

27

<210> 19

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 19

gtcgacaaag cgagagcttg cagaag

26

<210> 20

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 20

actagtcggt ttcgatttga tgatcc

26

<210> 21

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 21

actagtaaag tcgatccac ttgtagc

27

<210> 22

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 22

gagctccgac aacagaaatg gaatcatc

28